Small Business Innovation Research/Small Business Tech Transfer

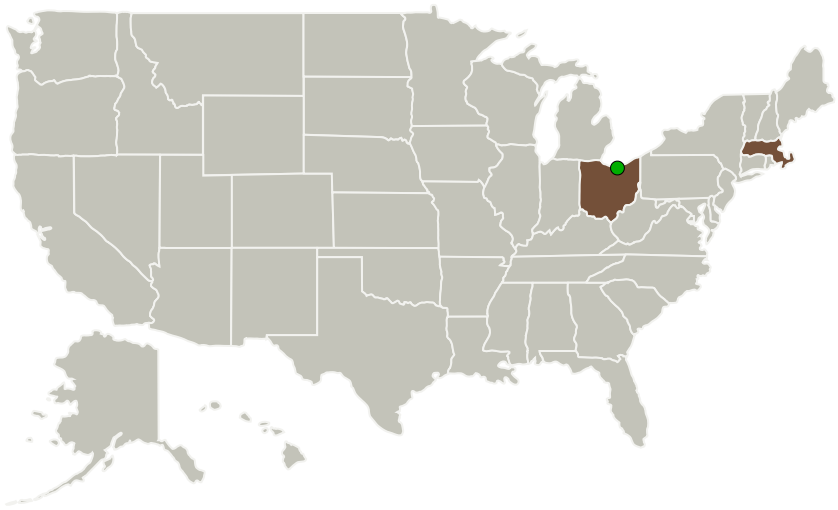
Lifetime Improvement of Large Scale Green Monopropellant Thrusters via Novel, Long-Life Catalysts, Phase II

Completed Technology Project (2014 - 2016)

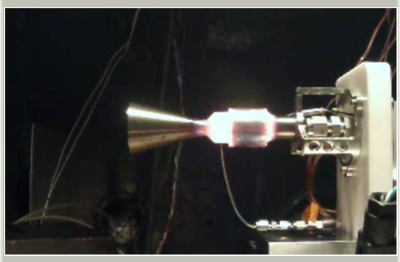
Project Introduction

Busek proposes to develop and life-test a flight-weight, 5N class green monopropellant thruster in Phase II. The most important feature that sets this thruster apart from other similar devices will be the use of an innovative, long-life catalyst. This proprietary catalyst, constructed without any bed plate or ceramic substrate, has the potential to suppress catalyst-related performance degradation problems that often plague monopropellant thrusters. The Phase II thruster in essence will be a matured version of the highly-successful Phase I prototype, with the addition of high-temperature nozzle material. To further demonstrate the design's scalability, a 100N class thruster will be developed and demonstrated at the end of Phase II.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Busek Company, Inc.	Lead Organization	Industry Women-Owned Small Business (WOSB)	Natick, Massachusetts
Glenn Research Center(GRC)	Supporting Organization	NASA Center	Cleveland, Ohio



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Completed Technology Project (2014 - 2016)

Primary U.S. Work Locations	
Massachusetts	Ohio

Project Transitions

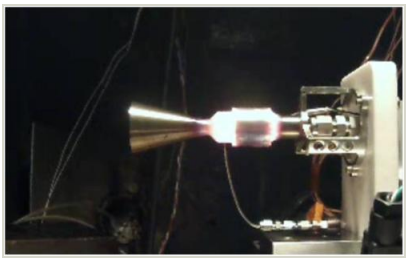
April 2014: Project Start

October 2016: Closed out

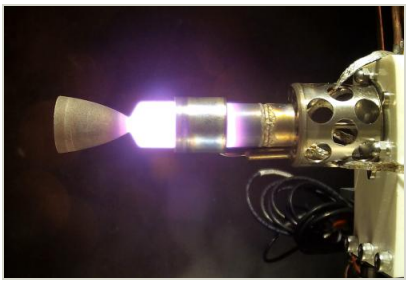
Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/137616)*

Images



Briefing Chart Image
Lifetime Improvement of Large Scale Green Monopropellant Thrusters via Novel, Long-Life Catalysts, Phase II *(https://techport.nasa.gov/image/132407)*



Final Summary Chart Image
Lifetime Improvement of Large Scale Green Monopropellant Thrusters via Novel, Long-Life Catalysts, Phase II Project Image *(https://techport.nasa.gov/image/127264)*

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Busek Company, Inc.

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

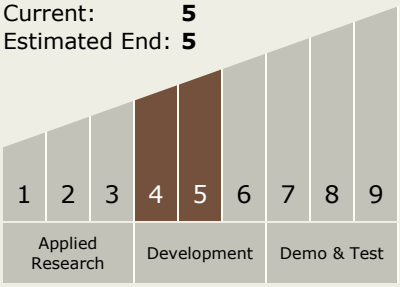
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Michael Tsay

Technology Maturity (TRL)

Start: **4**
Current: **5**
Estimated End: **5**



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Completed Technology Project (2014 - 2016)

Technology Areas

Primary:

- TX01 Propulsion Systems
  - TX01.1 Chemical Space Propulsion
    - TX01.1.2 Earth Storable

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System